dLAN® TV Sat PC

Contents

Preface

Thank you!

With the dLAN TV Sat PC, you have purchased a dLAN adapter that allows you to watch digital satellite television on your computer. The complex connection to the antenna using a conventional coaxial cable is unnecessary. The digital television signals are simply transmitted via dLAN to every room of the house over the power grid. Thus you can receive high-definition TV at every one of your computers via the HomePlug AV adapter—with all the benefits satellite television offers!

Exacting manufacturing standards and stringent quality control are the basis for our high product standards to ensure your fullest satisfaction with your devolo device. They are the preconditions for the consistent, outstanding quality of our products.

And if you are satisfied with this device, be sure to have a closer look at our other products which are also designed to make your connected lifestyle easier and simpler!

About this manual

After a brief introduction to "dLAN" basics and a brief overview of the function and features of the dLAN TV Sat PC in **Chapter 1**, **Chapter 2** will describe the quick start in a standard environment. **Chapter 3** will then show you in detail how to set up and operate the dLAN adapter successfully. This chapter also provides information regarding the included TV and radio software, Elgato EyeTV lite. **Chapter 4** describes the adapter's configuration options and how to integrate the product into a dLAN network. For information about the included TV and radio software, Cyberlink TV Enhance, refer to **Chapter 5.** Finally, the **Annex** contains additional information about product safety and the environmental compatibility of the adapter.

Icons

A number of places in this manual are highlighted with special icons:

Very important note. Failure to observe this note may result in damage.

Important note: *you definitely should make a note of these recommendations.*

Interesting information: *additional tips and background info on the configuration of the products.*

We hope you have just as much fun reading this manual as we had writing it. If you have any further ideas or suggestions related to our products, we would be delighted to hear from you at support@devolo.com!

devolo on the Internet

You can also rely on devolo for service and support after purchasing one of our products. For example, our website not only contains extensive documentation, but also software and firmware updates. Be sure to visit www.devolo.com regularly.

We especially recommend the extensive devolo manuals on the topic of home networking that contain a wealth of interesting background information. These are available free of charge and can be downloaded from the Service & Support area of our website.

1   Introduction

dLAN is an intelligent, secure technology that lets you set up a home network easily, quickly and economically via your household power grid, without the need for complex and expensive dedicated cabling. The available performance and effort required for the installation also compares favourably to traditional methods—dLAN technology now attains speeds you would expect from other LAN technologies, and installing it is a breeze!
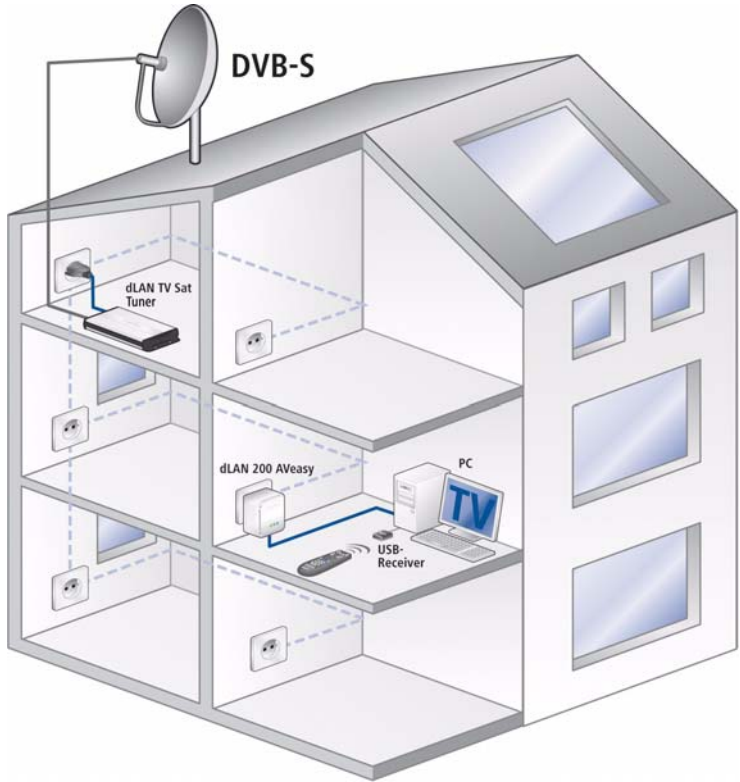
With dLAN adapters, not only network signals can be easily be transferred via the power grid. Video signals in the HD standard and audio signals in digital CD quality can be quickly and easily distributed everywhere in the house this way. With dLAN adapters, you can turn all of your computers into a TV or radio in no time at all!

1.1   What exactly is dLAN?

The **dLAN** (**d**irect **L**ocal **A**rea **N**etwork) uses the household power grid to transfer data between computers equipped with suitable adapters and other network components. As a result, any power outlet can be used as a network access point. The data is modulated prior to transfer and sent as a signal via household power lines. State-of-the-art technology ensures that the power and data networks do not interfere with one another. Networking via dLAN is fast and secure. The data is encrypted to prevent easy interception by third parties.

1.2   What does the dLAN TV Sat PC offer you?

The devolo dLAN TV Sat PC is a digital satellite receiver that uses the DVB-S2 standard and transmits the received audio and video signals over the network to a connected computer. The network interface enables transfer rates of up to 200 Mbps in the HomePlug AV standard. Additional "Quality of Service" [QoS] methods guarantee automatic prioritisation of the image and sound signals and thus interference-free transmission.

In addition to the devolo software, the adapter comes with the **CyberLink TV Enhance** software (for Windows) and **Elgato EyeTV lite** (for Mac OS X, version 10.4.11 or later), with which you can watch TV and listen to the radio on your computer. Drivers for the Linux (Ubuntu 8.04/8.10) operating system are also included.

The highlights:

● Simultaneous reception of up to four satellites (depending on your antenna system)
● Time-shifted television
● Scheduled recording of TV and radio in MPEG2 format
● Electronic Program Guide (EPG)
● Dolby Digital AC3 sound for recording and playback (if broadcast by the respective channel)
● Teletext
● Screenshot function for TV pictures and teletext

To make using your dLAN TV Sat PC as convenient as possible, the adapter includes a remote control with USB infrared receiver (Windows only), which you can easily connect to the computer.

You can connect the dLAN TV Sat PC to your computer using conventional Ethernet wiring (directly or via a switch). Because there is usually neither coaxial or Ethernet wiring between the satellite antenna and the computer, connection via the power grid using dLAN adapters is a particularly convenient option. It allows you to not only avoid the bother of having to route new wiring, it also allows you to locate your media centre anywhere in your home where there is a power outlet.

Ensure that the components of the dLAN TV Sat PC are used according to their intended use in order to prevent damage to these or other devices. The intended use of the dLAN TV Sat Tuner tuner is to receive DVB-S/S2 satellite signals and transmit them to the connected network. The intended use of the dLAN TV Sat Tuner power supply is to supply power to the dLAN TV Sat Tuner and to connect the dLAN TV Sat Tuner to the dLAN.

2   Quick start for Windows

Follow the steps listed below to quickly set up the devolo dLAN TV Sat PC in the following standard environment:

● Satellite antenna with an LNB, pointed to Astra 19.2° East
● Connection via the power grid with the dLAN TV Sat Tuner and a devolo dLAN 200 AVeasy adapter (dLAN default password "HomePlugAV").
● PC with the operating system Windows Vista (32/64 bit) or Windows XP (32 bit)

This configuration is just an example of one of many options. If you want to set up your dLAN TV Sat PC in another environment or have problems with one of the steps described here, refer to the two following chapters for additional details about the corresponding point.

At the installation location of the satellite antenna

❶ Install the satellite antenna at a suitable location so that the LNB is pointed to the Astra satellite 19.2° East.

❷ Connect the satellite antenna to the antenna input (**Antenna**) of the dLAN TV Sat Tuner using a coaxial cable with F-connector.

❸ Connect the network cable of the power supply to the **LAN** jack of the tuner and the power cable (DC connector) to the power input (**DC IN 12V 1.5A**) of the tuner.

❹ Plug the power supply of the dLAN TV Sat Tuner into a power outlet.

At the location of the computer

❺ Plug the dLAN 200 AVeasy adapter provided (starter kit only) into a power outlet close to the computer. Connect the computer and the dLAN adapter to each other using the Ethernet cable (starter kit only).

❻ Put the product CD of the dLAN TV Sat PC into the computer's CD/DVD drive.

❼ First, install the driver software for the adapter, then install the CyberLink TV Enhance program. To do so, simply follow the prompts of the installer.

❽ Start the CyberLink TV Enhance application by double-clicking the newly created link on the desktop.

9 The installation wizard is called up automatically the first time you start the program. This is how you should proceed:

○ Select a display format that corresponds to your monitor (**4:3** or **16:9 Widescreen**).

○ Select your speaker configuration (e.g. **6 speakers** for a 5.1 surround sound setup).

○ Select your country from the list as the location.

○ Confirm the folder for recorded programs on your hard drive.

○ Click the **Scan channels** button.

○ Select **1** as the number of satellites used.

○ Select **Astra 1F/1G/1H/1KR/1L(E19)** as receivable satellites. The system now searches for the channels. This may take a long time.

○ Confirm all further steps with **Next**. In the last step, close the installation wizard.

That's it! You should now be able to receive several hundred television channels on your computer.

3   Initial use

This chapter covers the hardware and software features, as well as its installation and initial use.

3.1   Package contents

Please ensure that the contents of the package are complete before proceeding with the installation of your adapter: The following items should be present:

- dLAN TV Sat PC, dLAN TV Sat Tuner (with mains adapter)
- Installation material for dLAN TV Sat Tuner
- Remote control with batteries and USB receiver (Windows only)
- Antenna cable (coax)
- dLAN 200 AVeasy with Ethernet cable (starter kit only)
- Hard copy of installation guide
- CD containing software and online documentation

3.2   System requirements (PC)

- ● Processor with at least 1.7 GHz (3 GHz recommended for HD programmes)
- ● At least 512 MB RAM
- ● Sound card
- ● Graphics board with at least 256 MB memory
- ● Supported operating systems: Windows Vista (32/64 bit), Windows XP (32 bit), Mac OS X 10.4.11, Ubuntu 8.04/8.10

3.3   Indicators and connections

3.3.1   Control lamps (LEDs)

On the tuner

The current status of the adapter is indicated by control lamps (LEDs) on the rear side of the housing:

Operation, ON (green): illuminated if the adapter is connected to the power grid.

Connect (red): illuminated if a connection exists between a computer and the dLAN TV Sat PC.

LAN connection (yellow): illuminated if a connection to the network exists.

LAN connection (green): flashes when data are being transferred in the LAN.

On the power supply

The power supply of the dLAN TV Sat Tuner has three control lamps that indicate the current status by their colour:

Power:

● Green: the power supply is operational.
● Orange: the power supply is in standby mode.

dLAN (flashes when data is being transmitted):

● Green: the network connection is suitable for HD video streaming.
● Orange: the network connection is suitable for SD video streaming and online gaming.
● Red: the network connection is suitable for simple data transfer and Internet access.

Ethernet (flashes when data is being transmitted):

● A 100 Mbps or 10 Mbps connection to the Ethernet network exists.

3.3.2 Connections and buttons

On the tuner

The product is very easy to use. Therefore, the device has just a few connections:

● The **power jack (DC IN 12V 1.5A)** is used to connect the adapter to your power grid.

● The device is connected to the network via the **LAN jack**.

● Using the **antenna input (Antenna)**, you can connect the dLAN TV Sat Tuner to the LNB of the satellite antenna or the multiswitch.

On the power supply

The power supply of the dLAN TV Sat Tuner has three cables and a button:

● Connect the power supply to the power outlet using the **power cable (230V European plug)**.

● Connect the power supply to the power jack of the tuner outlet using the **power cable (12V DC connector)**.

● Using the **Ethernet cable (RJ45)**, connect the power supply to the LAN jack of the tuner.

● Using the **encryption button** next to the power cable, you can secure the transmission of data via the dLAN at the touch of a button.

Note that the power supply of the dLAN TV Sat Tuner switches to Standby after approx. 20 minutes if the network cable is not connected to the tuner. In Standby mode, the power supply cannot be accessed via the power grid. As soon as the tuner is connected to the network and power cables, the power supply is once again accessible via the power grid.

3.4 Connecting the adapter

Follow the sequence below in order to connect the dLAN TV Sat Tuner to the LAN, the satellite antenna and the power grid.

Tip: First, check whether you can receive stations with the current alignment of the satellite antenna, for example by connecting a receiver with a television for test purposes. Then, check whether a connection is possible from your computer to the dLAN TV Sat Tuner, for example by first installing the devolo software on the computer, creating the local network on the computer and then checking whether the Connect light is illuminated on the dLAN TV Sat Tuner when you start the corresponding TV and radio software.

3.4.1 Connection to the network

Multiple options exist for connecting the dLAN TV Sat Tuner to a computer using the LAN interface:

Connection via the dLAN

The installation location of the satellite antenna (and thus of the dLAN TV Sat Tuner) usually has neither coaxial nor Ethernet wiring. However, there is usually a nearby power outlet. Therefore, connecting the dLAN TV Sat Tuner and the computers in your home via dLAN is a convenient option.

To network the various devices with each other via dLAN, you have to plan in one additional dLAN adapter for each. Connect the power supply of the dLAN TV Sat Tuner with the power outlet. Then, connect the computer to the dLAN TV Sat Tuner using a compatible dLAN adapter. For additional information about initial use of the dLAN adapter, refer to the manual.

If possible, do not plug the adapter into a power strip. This may impair the transmission of the dLAN signals. A free wall outlet is preferable. For additional information about bandwidth optimisation in the dLAN, refer to the Annex of this manual.

Connection via network switch

If Ethernet jacks are already available both at the installation location of the satellite antenna and near the computer and are connected to each other using a switch, you can use this network to connect the dLAN TV Sat Tuner and the computers. In this case, simply connect the tuner and all computers to the network jacks as usual using simple Ethernet cables.

In this case, it usually makes no difference whether you use a crossover cable or a patch cable, as most current Ethernet switches now have the ability to interpret the pin assignment automatically (Auto-MDI/X).

Direct connection

You can connect the computer to the tuner of the dLAN TV Sat Tuner directly using an Ethernet crossover cable.

Ensure that the network cable used has crossover contacts, as otherwise no connection will be established.

How to tell when you have done it correctly

● If the dLAN TV Sat Tuner detects a network, the Ethernet LED on the power supply and the yellow LED in the LAN jack are illuminated.

● When data are transmitted via the network interface of the dLAN TV Sat Tuner, the Ethernet LED on the power supply and the green LED in the LAN jack flash.

● If the dLAN TV Sat Tuner is visible from one of the computers connected via LAN in the **devolo Informer** program, a connection is possible. It may still be necessary to assign a shared dLAN password for the physically connected dLAN adapters using the **devolo dLAN Configuration Wizard**. For more information on this topic, refer to Chapter 4.

● If the devolo software has been installed correctly on the desired computer, a network connection to the adapter exists and **Cyberlink TV Enhance** or **Elgato EyeTV lite** (or a corresponding TV and radio program for Ubuntu 8.04/8.10) has been started, the red **Connect** LED on the dLAN TV Sat Tuner is illuminated.

3.4.2   Connection to the satellite antenna

The LNB or multiswitch of a satellite antenna is connected to the antenna connection of the dLAN TV Sat Tuner using a coaxial cable with an F-connector. Carefully plug the cable into the F-jack of the adapter and tighten the outer nut of the connector.

Operating voltage of 16 to 18 V may be present at the coax connection of the LNB. To prevent damage to the LNB or the dLAN TV Sat Tuner, connect the adapter to the power grid via the power supply only after having made the connection to the antenna.

Also check the alignment of the satellite antenna to the desired satellite(s). You can obtain the necessary parameters (compass direction, tilt, etc.) from your satellite operator. If necessary, use a conventional satellite receiver and television to check whether you can receive stations using the current installation.

Note that the LNB voltage for the dLAN TV Sat Tuner is present at the antenna input only if a connection exists to a computer that is running the corresponding TV and radio software. This can be important when operating a satellite signal finder, for example.

How to tell when you have done it correctly

● If the satellite antenna and LNB are installed correctly, you can receive TV and radio stations using a conventional receiver and television.

● If a functional network connection to the desired computer exists, the devolo software has been installed and the corresponding TV and radio software has been started, TV and radio stations are found during a channel search.

3.4.3 Connection to the power grid

To connect the dLAN TV Sat PC to the power grid, plug the power supply into an available power outlet and plug the DC connector into the DC IN 12V 1.5A input on the tuner. Ensure that the power supply is fully inserted in the outlet.

How to tell when you have done it correctly

● When you connect the power supply to the power grid and the dLAN TV Sat PC, the Power LED is illuminated on the power supply and the green ON LED is illuminated on the back of the dLAN TV Sat Tuner.

3.5   Connecting the remote control in Windows

The remote control provided is Windows compatible. For operation in Mac OS X, you can use the Apple Remote control.

Using the infrared remote control provided, you can operate all important functions of the **Cyberlink TV Enhance** program even if not sitting directly in front of the computer.

Thus the installation requires just two easy steps:

❶ Insert the two AAA batteries into the remote control in the correct position (follow the illustration in the battery compartment). Using the batteries incorrectly can damage the remote control.

❷ Plug the separate infrared receiver into an available USB port of your computer. No additional driver installation is necessary. Adjust the receiver so that it is within optical signal range of the remote control.

How to tell when you have done it correctly

● If the infrared receiver has been plugged into an available USB port of the computer and receives key signals from the remote control, a red LED on the front side of the receiver housing is illuminated.

● When **CyberLink TV Enhance** is started on the computer, the application can be controlled successfully using the remote control.

Note that the remote control and receiver communicate using an infrared connection. Therefore, always position the receiver such that it is not being blocked or covered by any objects and can be seen from all desired positions in the room. When pressing keys on the remote control, always point it towards the receiver.

3.6   Software installation

3.6.1   Windows

The product CD accompanying the dLAN TV Sat PC includes various software components for operating the adapter under Windows:

● The devolo **dLAN TV Sat PC** software includes drivers and rules for supporting the adapter in the Windows operating system.

● Using the **devolo dLAN Configuration Wizard**, you can use your own network key in your dLAN network.

● The **devolo Informer** finds dLAN adapters in a dLAN network and displays information on the devices found.

● Using **CyberLink TV Enhance**, you can receive television and radio programs on your computer that the dLAN TV Sat PC transmits over the network from the satellite antenna.

To install the software, insert the included CD-ROM in the CD or DVD drive of your computer. If autoplay is installed on your computer, the installation will start automatically. Otherwise, open the Windows Explorer by right-clicking on **Start** and selecting **Explorer** from the context menu. Start the **AUTORUN.EXE** application on the CD.

The installation takes place in several steps:

❶ First, after starting the installer, select the menu item **Install dLAN TV Sat PC**.

❷ In the following dialogue, select the item **Software for dLAN TV Sat PC**.

❸ During the installation process, you will be given the choice of installing all software components (**Standard installation**) or only some of them (**Customer installation**). We recommend a full installation of all applications.

❹ If you want to use two devolo dLAN TV Sat PC units in your network, you can specify this in the next step. In this case, two receivers are available in **CyberLink TV Enhance**, for example for watching television on one channel while recording a program on the other.

❺ The devolo dLAN TV Sat PC software is now installed. In this process, in addition to the utility programs described above, drivers for supporting the adapter in the operating system and exception rules for the built-in Windows Firewall are set up.

*The two device drivers **Network Attached Tuner (Capture and Tuner)** can then be found in the Windows Device Manager in the category **Audio, Video and Game Controllers**.*

Because the devolo dLAN TV Sat PC transmits the digital audio and video signals to the computer via the network, the corresponding port range, 51793 to 51796 (UDP), in the firewall of the operating system. The installer enters and enables exception rules automatically for the built-in Windows XP or Vista firewall. If using your own hardware or software firewall, you have to enable the above port

range manually as an exception. You should be able to obtain additional information from the manufacturer of the firewall.

⑥ Once the dLAN TV Sat PC software has been installed successfully, the installed devolo software applications are in the program group **Start ▶ All Programs ▶ devolo**. You can now select whether you want to also install the **CyberLink TV Enhance** TV and radio software. In addition, you will be asked for permission to transfer (anonymous) performance data related to your dLAN adapter to devolo. The data sent to devolo pertains only to the performance values of your dLAN devices. The data is anonymised and will be used exclusively for statistical purposes. By providing it, you can help us improve our products.

⑦ After starting the installation of CyberLink TV Enhance, select the language you want for the setup program.

⑧ Confirm the licence agreements, enter the user information and CD key (found on the CD packaging) and, if desired, modify the destination and name of the program group.

⑨ CyberLink TV Enhance is now installed. Once the installation is complete, a link to the application appears on the desktop. The other applications are found in the program group **Start ▶ All Programs ▶ CyberLink TV Enhance**.

3.6.2   Mac OS X

The product CD accompanying the dLAN TV Sat PC includes software for operating the adapter under Mac OS X (**Mac OS X 10.4.11 Tiger or higher**).

● Using **Elgato EyeTV lite**, you can receive television and radio programs on your computer that the dLAN TV Sat PC transmits over the network from the satellite antenna.

① To install the software, insert the included CD-ROM in the CD or DVD drive of your computer. Double-click the **dLAN TV SAT PC** icon on your desktop. A dialogue window opens.

② Then, install Elgato EyeTV lite by dragging this icon to the **Programs** folder.

③ After the installation starts, follow the instructions of the setup wizard to configure your personal settings.

Confirm the licence agreement by entering the licence key for Elgato EyeTV lite (found on the CD packaging).

❹ Elgato EyeTV lite is now installed. Once the installation is complete, the application appears in the **Programs** folder.

For help regarding the operation and functionality of Elgato EyeTV lite, visit www.elgato.com. *By selecting* Help ▶ Elgato FAQ *in the application, you can go directly to the Elgato* Online help *(if you are connected to the Internet).*

To connect more than one dLAN TV Sat Tuner, you need the full version of Elgato EyeTV. *For more information, visit* www.elgato.com.

3.6.3   Linux

The **software** ▶ **linux** folder contains the dLAN configuration software. The **INSTALL** file contains all the necessary information for driver installation under Ubuntu 8.04/8.10. Current software can also be found in the download section of our website at www.devolo.com.

Applications that can be used for DVB-S in Ubuntu include Kaffeine, VDR and Myth TV.

3.7   Troubleshooting

Reliability and ease of use are important aspects of the design of the dLAN TV Sat PC. If, despite this, a problem should ever occur, this chapter contains a few useful hints intended to allow you to identify and remedy the problem. If you need additional support, the "Preface" chapter at the beginning of this manual tells you how to contact our support department.

The Power LED on the power supply is not illuminated.

① Check the connection of the power supply and the power outlet.

② Ensure that the power supply fits tightly in the outlet and that the outlet is supplied with power.

③ Try using a different power outlet.

The Power LED on the tuner is not illuminated.

① Check the connection of the tuner and the power supply.

② Check to ensure that the Power LED of the power supply is illuminated.

The yellow LED for the LAN connection (tuner) is not illuminated.

① For connection via dLAN: Check whether the Ethernet cable of the power supply is plugged tightly into the tuner of the dLAN TV Sat Tuner.

② For connection to a switch or dLAN adapter: Check whether you are using a directly connected Ethernet cable.

③ For direct connection to a computer: Check whether you are using an Ethernet crossover cable.

The green LED for the LAN connection (tuner) and the Ethernet LED on the power supply are not illuminated.

① The LEDs flash only when data are being sent to or from the dLAN TV Sat Tuner.

② Check whether the dLAN TV Sat Tuner is reachable via the network.

③ For a network via dLAN: Ensure that both the dLAN TV Sat Tuner and the dLAN adapter connected to it are using the same dLAN password.

The dLAN LED (power supply) is not illuminated.

① No dLAN connection exists.

② If the Power LED is also illuminated in orange: The power supply is in Standby mode, for example because the dLAN TV Sat Tuner is not connected.

The red Connect LED on the tuner is not illuminated.

① The Connect LED is illuminated only if the TV and radio software has been started on exactly one computer in the network. After you exit the program, the light goes out.

② It is possible that the dLAN TV Sat Tuner is already being used by another computer in the network. You can only use the adapter with one computer at a time.

③ Check whether the driver software is installed on the computer.

④ Check whether a firewall (on the local computer or on the network) is blocking a connection to the dLAN TV Sat Tuner.

No stations are found during the channel search.

① The satellite antenna is not aligned correctly. Check the installation, for example using a regular receiver and a television.

② Check the coax cable between the LNB of the antenna and the dLAN TV Sat Tuner.

③ A firewall blocks transmission of data between the dLAN TV Sat Tuner and the computer. If using a firewall other than the built-in Windows firewall (e.g. in the network), make sure that ports 51793 to 51796 (UDP) are enabled.

The picture is jerky or has interference.

① Check that the antenna is pointed towards the satellite correctly.

② Depending on the satellite, you may be in the fringe area of the satellite's coverage, in which reception is weaker.

③ Depending on the antenna size and quality, the weather (e.g. drizzle) can have a negative effect on reception.

Reception of HD stations (DVB-S2) stutters, though all other stations are received properly.

① The dLAN LED on the power supply of the dLAN TV Sat Tuner should be illuminated in green. If this control lamp is illuminated in orange or red, the throughput level in the dLAN is not sufficient.

② Test the throughput (e.g. using devolo Informer). For interference-free reception of a DVB-S2 channel, the throughput should be at least 16 Mbps.

③ Check the alignment of the antenna and readjust it if necessary.

④ The effects of inclement weather can impair reception. If, for example, reception is bad only when it rains, it may help to use a larger satellite antenna.

The remote control does not work.

① The remote control provided is Windows compatible. For operation in Mac OS X, you can use the Apple Remote control.

② Check whether the infrared receiver fits tightly in one of the computer's available USB ports.

③ Check whether the USB port works correctly, for example by plugging in another device as a test.

④ Check whether AAA batteries are inserted in the remote control in the correct position (according to the mark in the battery compartment) and that they have sufficient capacity.

⑤ Check whether when you press a key on the remote control, both the red LED on the remote control and the red LED on the front panel of the receiver are illuminated.

⑥ Position the receiver so that it is within clear view of the remote control.

4   Configuration

4.1   Connection to the dLAN

If the dLAN TV Sat PC is connected to the dLAN network via a corresponding adapter, the network is usually encrypted so that it can communicate with other devolo dLAN adapters of the same type. You have to define your own encryption only if using your own password in a dLAN network. More about that in a moment.

For security reasons, we recommend using a separate dLAN network password for all of your adapters.

Using another utility program, **devolo Informer**, you can gain an overview of all the reachable dLAN adapters in your own network.

4.2   The devolo Informer

The **devolo Informer** can detect all available dLAN adapters in your home network and display device information in an overview. After you install the devolo software, it can be found in the **Start ▶ All Programs ▶ devolo** program group.
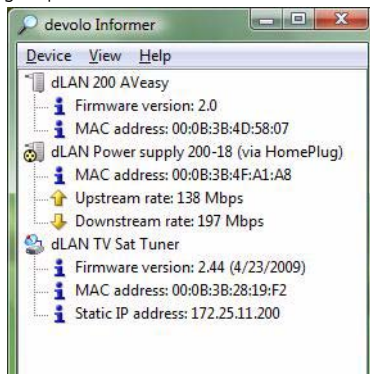
When the Informer is launched, it initially scans your home network for all available dLAN devices. This may take a moment. All found adapters are listed with their names, firmware version and MAC addresses in the overview window. Their transfer speeds of active connections between the adapters are displayed.

devolo Informer generally updates the list of found dLAN devices automatically. If newly-added adapters do not appear in the window, refresh the display with F5 or via the View menu.

*The **devolo Informer** can use special access techniques to find the adapter in your network in cases in which you cannot access it using a web browser or configuration program (i.e. when you do not know its IP address). Ensure that you always have the Informer "handy" for such cases.*

Use the Device menu or the context menu that opens with a right-click on the name of the displayed dLAN device to rename the adapter or launch one of the two configuration possibilities (**dLAN Configuration Wizard**). The original device name appears as another entry in the list.

Using View ▶ Options…, multiple instances of devolo Informer installed in your network can be set to exchange information about found dLAN adapters. You may also specify whether information on the performance of your dLAN adapters will be transferred to devolo here. The data sent to devolo pertains only to the performance values of your dLAN devices. The data is anonymised and will be used exclusively for statistical purposes. By providing it, you can help us improve our products.

4.2.1   The devolo Informer and dLAN TV Sat PC

Use the Device or the context menu that opens with a right-click on the name of a displayed dLAN TV Sat PC to define the IP settings.
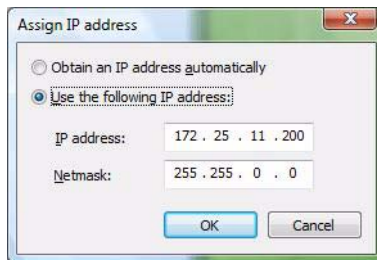
According to the requirements of your network, configure how the adapter is to obtain its IP address. By default, the adapter obtains the IP address automatically, i. e. from a corresponding DHCP server in the network. Alternatively, you can also disable this option and enter both the exact IP address and the Net mask manually.

*If the entry **Device unreachable, check IP configuration** appears in the overview window, there is a discrepancy in the IP settings. In this case, no TV picture will be transmitted.*
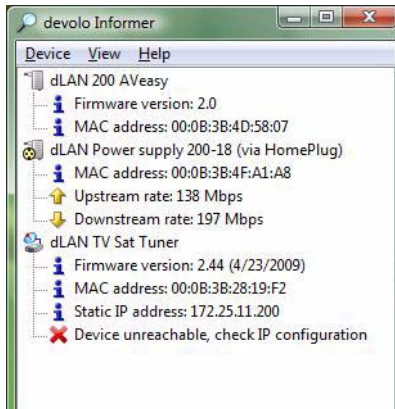
When video transmission is in progress, the overview window shows the entry **Streaming video to this computer** or **Streaming video to 172.25.11.220** depending on whether the dLAN TV Sat PC is connected locally or remotely in the network.
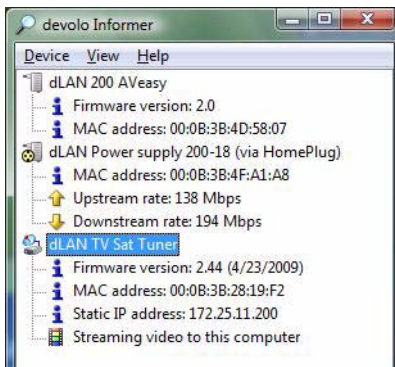
4.3   Security in the dLAN network

Data communication via the household power grid is encrypted to ensure the privacy of your dLAN network. The following section describes data encryption options—either using the encryption button or the dLAN Configuration Wizard.

Please note the following basic principle when choosing your encryption method:

● *In dLAN networks that consist only of adapters with encryption button, the individual data encryption works "at the touch of a button".*

● *In a "mixed" dLAN network that contains adapters with and without encryption button, the data transmission must always be encrypted using the dLAN Configuration Wizard.*

4.3.1　dLAN 200 AV network encryption at the touch of a button

To encrypt a dLAN 200 AV network, if the adapters have the corresponding equipment, you can simply use the encryption button on the device. Pressing this button will encrypt your dLAN 200 AV network with a randomly generated password.

The encryption button of the dLAN TV Sat PC is on the power supply.

Adapters cannot be configured while in Standby mode.

The following section contains exact instructions on the basis of possible network scenarios:

① Encrypting a new dLAN 200 AV network with two dLAN 200 AV adapters

Once both dLAN 200 AV adapters have been successfully connected, press each encryption button for **two seconds** within two minutes of one another. That's it! Your dLAN 200 AV network is now protected against unauthorised access.

② Expanding an existing dLAN 200 AV network using a new dLAN 200 AV adapter (e.g. the dLAN TV Sat PC)

If you have already secured your existing dLAN 200 AV network using the encryption button, use the same method to integrate further adapters. Once you have successfully connected the new dLAN 200 AV adapter to the socket, first press the encryption button of one of your network's existing adapters (**two seconds**), then press the encryption button of your new dLAN 200 AV adapter (**two seconds**) within two minutes. That's it! The new dLAN 200 AV adapter is now integrated in your network.

To integrate additional dLAN 200 AV adapters in your network, repeat the above steps.

③ Removing a dLAN 200 AV from the network

To remove a dLAN 200 AV adapter from an existing network, press its encryption button for **at least ten seconds**. The device will be assigned a new randomly generated password and will thus no longer be able to access the network. To integrate the adapter in a different dLAN 200 AV network, follow the steps described under ① or ②, depending on whether you are setting up a new network or adding the adapter to an existing one.

4.3.2   Encrypting the dLAN 200 AV network with the dLAN Configuration Wizard

You can also configure the encryption of the data transmitted via the dLAN using the **dLAN Configuration Wizard**.

If you use a dLAN adapter without an encryption button in your network, you have to use the Configuration Wizard to set up encrypted data transmission.

After successfully installing the devolo software, you can launch the **dLAN Configuration Wizard** in the **Start ▶ All Programs ▶ devolo** program group or via the **Device ▶ Start dLAN Configuration Wizard** menu in the devolo Informer.

Before beginning with this step, make a note of the security IDs of all existing dLAN adapters. This unique identifier of each dLAN device is located on the label on the underside of the housing. It consists of 4 x 4 letters or figures separated by dashes (e.g. ANJR-KMOR-KSHT-QRUV). Ensure that all dLAN adapters are connected to the power grid and computers or other network components as appropriate.

If the dLAN Configuration Wizard cannot find a dLAN adapter in your network even though one is plugged tightly into a power outlet, follow the instructions for bandwidth optimisation in the Annex.

Configuring your dLANs using the Configuration Wizard consists of three steps:

❶ Scan for local dLAN adapter

After launching the Wizard, it initially scans for a dLAN adapter connected directly to your computer.

❷ Enter network password

If at least one dLAN adapter has been found that is reachable directly from your computer, you can select a network password in the next step to be valid for this and all other specified adapters in your personal home network.

You can choose between your own password, a random password and the default password. To define your own password with a length of at least eight characters, enter this into the **Network password (min. 8 characters)** text field. Alternatively, you can have a randomly selected, highly secure password assigned using the **Random password** button. Pressing the **Default password** key resets the password of the dLAN adapter to the factory setting. Normally, the display of the password is hidden for security reasons. If you enable the option **Show characters**, the current password is displayed in legible form in the text field.

The default password in the factory default settings is "HomePlugAV".

Assigning a specific password to a single adapter will exclude it from the remaining dLAN network.

❸ (Optional) Configuring additional dLAN adapters

After setting up the local dLAN adapter, you can, if you want, assign the dLAN password selected in Step 2 to other dLAN devices in your network in order to form a closed dLAN network.

You will need the 16-character **Security IDs** of the various adapters from the label on the housing. Enter the code without hyphens in the 4 text box and confirm by clicking **Define password**. If a security ID is correct and the device is reachable in the dLAN, the device is added to the list of already configured adapters.

When launching the dLAN Configuration Wizard again after a successful initial installation—when integrating a new adapter into the network, for example—**the application will remember** devices and security IDs entered in previous sessions if you have encrypted them with a personal **network password or the default password**. In this case, you do not need to enter the devices again.

However, if the **random password** was used to encrypt the network during the last installation, if you want to integrate a new adapter into the network, you must re-register all previously entered dLAN adapters using the security ID.
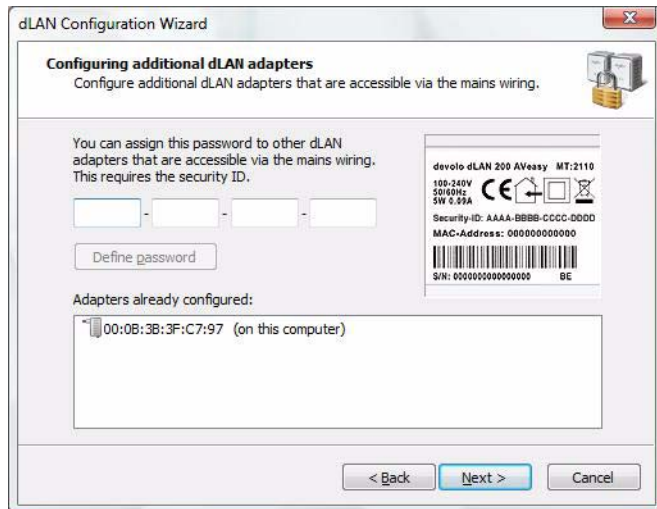
Once you have entered the security IDs of your dLAN adapters, your dLAN network is complete. All computers and other network devices connected to the adapters by cable should now be able to communicate with one another in the network.

4.4 Setting up CyberLink TV Enhance

You can configure the various settings of CyberLink TV Enhance using the following dialogues:

● Scan channels
● TV settings
● Recording settings
● Program Guide settings (EPG)
● Display and audio settings

🔲 To reach the settings screen, press the **Menu** button of the quick menu on the bottom edge of the CyberLink TV Enhance screen or on the devolo remote control. From the context menu, select **Menu**, then press the **Settings** button. The most important options can also be defined using an installation wizard.

*Remember to save your changes to the setting using the **Apply** button in the button menu on the left side of the setup screen before you exit the **TV settings** submenu.*

4.4.1   The Setup Wizard

When you start CyberLink TV Enhance for the first time or call it up manually via Menu ▶ Menu ▶ Settings ▶ Run Setup Wizard, the **Setup Wizard** is called up, which prompts you to enter the most important settings for receiving digital satellite programs:

❶ Display format: Here, select your monitor's aspect ratio (**4:3 Normal** or **16:9 Widescreen**).

❷ Speakers: Using a drop-down menu, you can select the kind of audio playback you want. Select the number of speakers connected (e.g. **6 speakers** for a 5.1 surround system) or **Headphones** or **SPDIF** (for digital output to a corresponding device).

❸ Location: Enter the country where you are located. This information is used to determine which satellites are available, for instance.

❹ Storage location for recordings: By default, TV Enhance stores the programs it records (TV or radio) in this folder: Documents and Settings ▶ <User Name> ▶ My Documents ▶ My Videos ▶ Recorded TV. Alternatively, you can select your own target folder.

❺ Channel scan: The devolo dLAN TV Sat PC is displayed as DVB-S TV device 1 (dLAN TV Sat (Tuner)). You can now scan for channels by clicking the corresponding button. Alternatively, you can do this later using the settings menu. For the search, enter the number and name of the satellites that you want CyberLink TV Enhance to search for channels.

During the new search for digital satellite channels, previously found stations are deleted.

⑥ Exit Setup Wizard: Finish the installation using the **Exit** button to return to CyberLink TV Enhance.

4.4.2   Scan Channels

Using the "Scan Channels" button in the button menu on the left side of the setup screen, you can search the currently configured satellites for channels. During the search process, each channel found is shown briefly. An indicator below the display window provides information about the progress.

When you start a channel search, the previous channel configuration is deleted. A corresponding security prompt appears warning you of this.

Depending on the number and type of selected satellites, the search for channels can take a long time. Please wait until the process has finished completely.

4.4.3   Signal Settings

In the "Signal Settings" configuration dialogue, you can configure the reception of digital satellite stations with the dLAN TV Sat PC:

TV/AV Source

In addition to the dLAN TV Sat PC **Digital TV (DVB-S) 1**, the CyberLink TV Enhance program supports additional tuners that are connected to your computer or built into it. Using the "Image source" option, you can select one of these receivers as an alternative.

Region

Depending on your current location, you can receive programs offered by different satellites. Under "Region", select the country where you are currently located so that CyberLink TV Enhance can offer you the correct selection of available satellites.

Remember that your satellite antenna also has to be set up accordingly.

Even within the same country, a satellite may not be able to be received in all areas. For example, the Astra satellite at 23.5° East covers only the extreme western part of Germany.

Audio

Because audio transmission from the dLAN TV Sat PC to your computer is always digital, this option cannot be changed if you select the corresponding receiver, **Digital TV (DVBS) 1**. Another audio signal can be configured here in some cases, but only if another receiver has been selected as the video source.

TV Audio Input

Instead of the audio signal transmitted by the dLAN TV Sat PC **(TV Tuner Audio)**, you can select an alternative sound input with the "TV Audio In" option. All audio inputs currently configured in the Windows operating system are available.

*Because the audio signal is transmitted along with the picture as a data stream from the dLAN TV Sat PC to CyberLink TV Enhance, the sound of the receiver can be received via the option **TV Tuner Audio** only.*
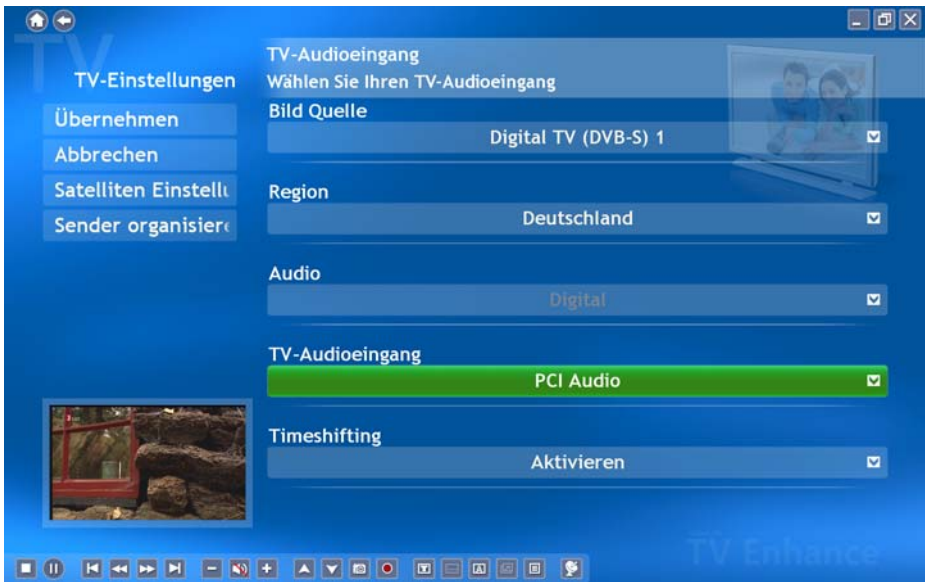
Time-Shifting

Using **Enable Time-Shifting**, TV and radio programs can be received in Cyber-Link TV Enhance for later viewing. To do so, the playback of a current program can be stopped while the program is buffered in the background. You can resume watching or listening at any time. While doing so, you can use the navigation buttons in the quick menu of the application or on the devolo remote control to navigate forward and back within the buffered program. You can enable or disable this function using the corresponding **Timeshifting** option.

Using TimeShifting, you can rewind a maximum of one hour in the current program. This assumes that CyberLink TV Enhance was started that long ago and was tuned to this channel.

Satellite Settings

Using the **Satellite Settings** in the menu on the left side of the screen allows you to select the number and type of satellites to be received. First, under **Capture Device** select how many satellites you can receive using your current satellite antenna. Up to four different satellites are possible. Then, using the corresponding drop-down menus for Satellite 1-4, define which concrete satel-

lite configurations your dLAN TV Sat PC is to take into account when searching for channels.

The list of available satellites depends primarily on the selection of your location using the **Region** *option in the* **Signal settings**.

Manage Channels

Using the **Manage Channels** function, you can move, sort or rename the TV and radio stations you have found during a search for channels. A list of existing TV channels is shown as the default. Using the corresponding options, **TV** and **Radio**, in the button menu on the left edge of the screen, you can switch between the two types of stations.
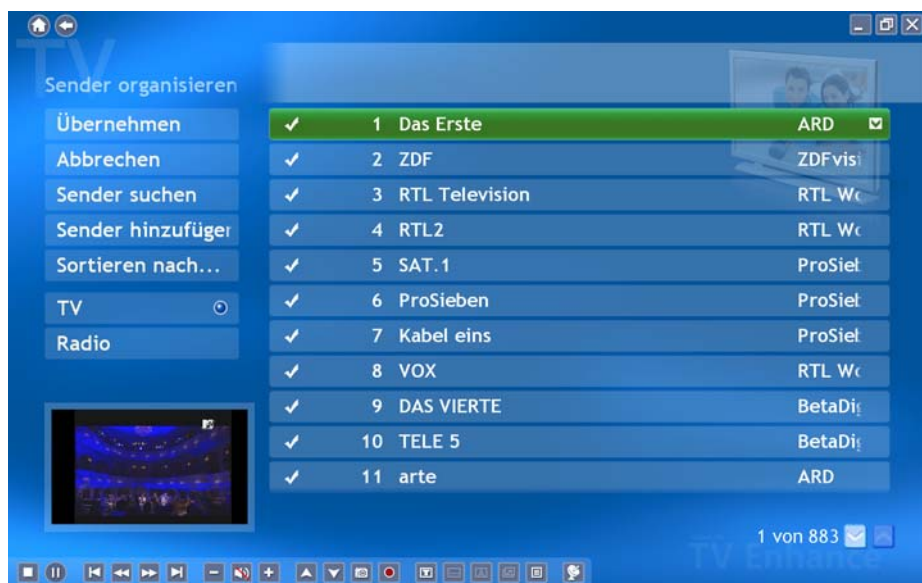
You can navigate through the list using the mouse or the arrow keys on the computer keyboard or the devolo remote control. You can modify the properties of a channel by clicking the drop-down menu to the right of the entry using the mouse, by pressing the **Enter** key on the keyboard or using the **OK** key on the devolo remote control:

● Using the **Select** or **Deselect** option, you can select a channel entry in order to, for example, include or exclude it when sorting the list of channels.

● Using the **Rename** function, you can change the name of a channel in the list using the computer keyboard. Edit the channel name and confirm the entry with **Enter**.

● You can change the position of a channel in the list by selecting **Move**. Using the arrow keys of the computer keyboard or on the devolo remote control, determine the new position in the list of channels and press the **Enter** or **OK** key.

Using the **Scan Channels** button, you can start the channel search described above on the currently selected satellites.

Using the **Add New Channel** function, you can add a certain station to your list of channels even if it is not otherwise found by the automatic channel search in CyberLink TV Enhance. For this purpose, a wizard is started that prompts you to enter the following information:

If necessary, first step up the desired satellite in CyberLink TV Enhance using Menu ▶ Menu ▶ Settings ▶ Signal Settings before adding a channel transmitted by this satellite.

1 **Satellite:** From the up to four satellites you currently have configured, select the one on which the channel you want to set up is offered.

2 **Channel data:** Enter the various parameters for the new channel here.

● Transponder frequency in Mhz
● Symbol rate (K symbol/SEC)
● Polarisation (horizontal or vertical)
● FEC rate (automatic or fixed value)

3 **Transponder data**: Finally, select the properties of the transponder:

● Transponder type (DVB-S or DVB-S2)
● Modulation (QPSK, BNBC_QPSK, 8PSK, 16APSK or 32APSK)

4 Now, the system searches for the specified channel on the satellite. If it is found with sufficient quality, it is then added to the list of channels.

List by...

All available channels can be sorted automatically using the **List by...** function on the left edge of the **Manage Channels** screen according to the following criteria:

● **Alphabetically** by channel name

- By **Transponder**: On the satellite, multiple channels are transmitted technically using what is called a transponder.
- By **Provider**: The respective provider (e.g. a multiplex) is always also displayed to the right of each channel entry.
- Alternatively, you can also restore the original **Preset**. The default list is displayed after the channel search. In the process, the unencrypted stations are sorted to the top and the encrypted channels are moved toward the bottom.

4.4.4   Recording Settings

In the Recording Settings, you can define various options for recording programs with CyberLink TV Enhance.

Recording Quality

When the devolo dLAN TV Sat PC is selected, all programs are always recorded in the optimal recording quality. Therefore, this setting cannot be changed.

Recording Destination

By default, recordings are stored in this folder: **Documents and Settings** ▶ **<User Name>** ▶ **My Documents** ▶ **My Videos** ▶ **Recorded TV** of your hard drive. By clicking the file path under "Recording Destination", you can define a new storage location by navigating through your drive's folder structure. Confirm your selection with the **Select** button.

Selecting captured teletext format

If you take a snapshot of a teletext page this can be stored in various image or text formats. Select the desired file format using the drop-down menu:

- Image (.BMP)
- Unformatted text (.TXT)
- Formatted text (.RTF)

● Hypertext (.HTML)
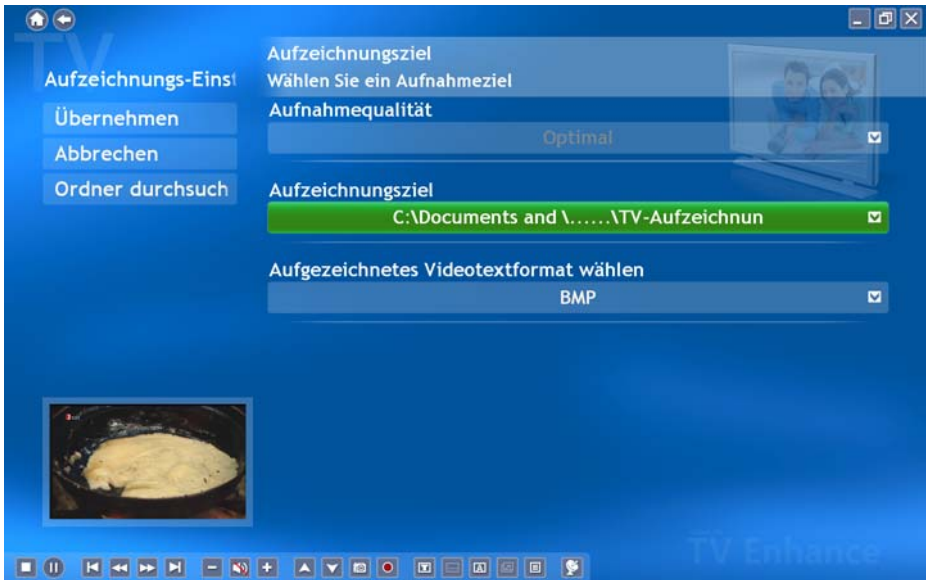
4.4.5   Guide Settings

CyberLink TV Enhance has its own digital program guide (EPG=Electronic Program Guide) that provides information such as the title, time of day, length and description of the programs broadcast by the various channels. Using two options, you can configure how the program guide is to obtain its data:

Signal Type

When the dLAN TV Sat PC is selected as the satellite receiver, the only signal type available is DVB‑S. This information is important when using the DVB‑SI signal as the EPG source.

EPG Source

The program guide can obtain information about the broadcast programs in any of three ways:

● From the DVB‑SI signal: The digital data stream offered by the various satellites usually contains quite precise information about the broadcast programs. However, not all channels offer details about their programs in this way. The DVB‑SI signal is always available whenever stations can be

received via satellite. No Internet connection or additional subscriptions are required—this service is free of charge.

● From epgData.com: The data from the free Internet program guide epg-data.com can be called up using the corresponding option. However, the information are sometimes incomplete, precisely for German-speaking channels.

● From the provider **tvtv**: Commercial service provider tvtv provides its own detailed program information via the Internet. Your dLAN TV Sat PC includes a three-month trial subscription to this service. If you want to continue using it after the trial, you can obtain a paid subscription.

4.4.6   Display & Audio Settings

In the Display & Audio Settings, you can configure options for the image and sound output of CyberLink TV Enhance.

Screen Ratio

Select an aspect ratio that corresponds to the monitor on which the TV picture is to be output (**4:3** or **16:9 Widescreen**).
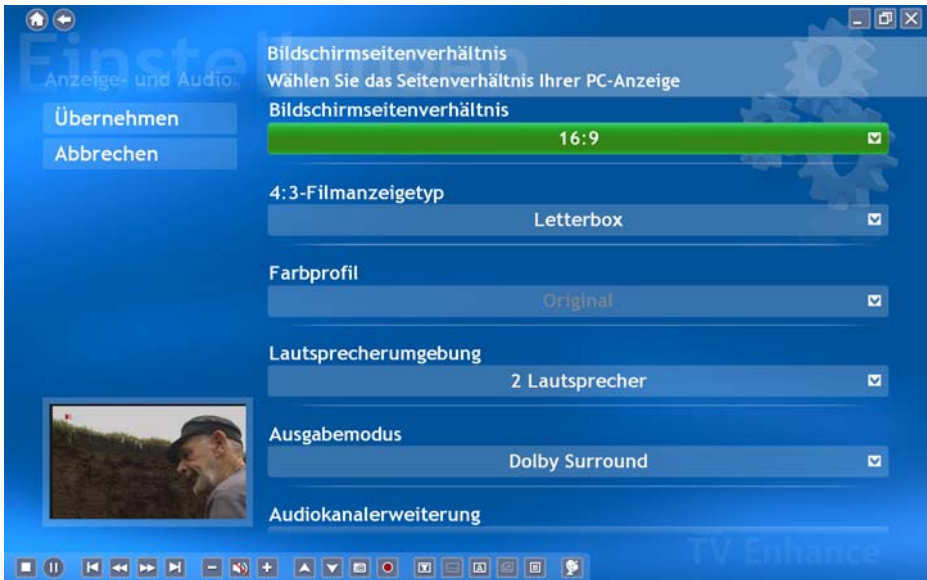
Movie Display Type

Depending on the screen aspect ratio selected, **Movie Display Type** lets you define how movies are to be displayed in the other format (i.e. **4:3** for the aspect ratio **16:9** and vice versa). There are two basic options:

● **Letterbox**: When the video image is output, the information the station provides about the format is kept. No adjustment is made by CyberLink TV Enhance. Thus a program in 16:9 is rendered in full screen on 16:9 monitors, while a 4:3 program appears with black bars to the left and right of the picture. A program in 4:3 appears in full screen on 4:3 monitors, while a 16:9 format (such as a movie) appears with black bars above and below the picture.

● **Pan & Scan**: CyberLink TV Enhance enlarges the image on 4:3 monitors so that the image can be displayed in full screen, even when watching 16:9 programs. Because the entire vertical screen area is being used, portions of the picture on the left and right necessarily have to be cropped. If you have

configured the screen aspect ratio as 16:9, the only available option is **Letterbox**.

Colour Profile

When the dLAN TV Sat PC is selected, an original colour profile is always set, and thus this option cannot be changed.

Speaker Environment

In the **Speaker environment** option, set the number of speakers connected to your computer (for example, 2 speakers=stereo, 6 speakers=5.1 environment, etc.). Alternatively, you can route the sound output to headphones or the computer's digital SPDIF output.

Audio Channel Expander

Depending on the audio signal offered by the current channel, under "Audio channel expander", you can define which type of sound playback CyberLink TV Enhance is to use. Most stations have at least a stereo and a Dolby Surround signal. However, an increasing number of them are now also being broadcast with Dolby Digital sound, in which the audio data are transmitted in completely digital form from the station's transmitter to the satellite to your computer, which serves as the receiver device. Then, assuming you have a correspondingly equipped amplifier and a suitable connection to your computer (e.g. using an optical TOSlink cable), you can play back the digital sound.

Load Default Settings

If you want, you can reset the display and audio settings to the factory settings using the **Load Default Settings** button.

5   CyberLink TV Enhance

5.1   About CyberLink TV Enhance

You can use the CyberLink TV Enhance program to watch television and listen to the radio on your computer. Alongside the corresponding configuration options, the application makes available some additional functions:

● A timeshift function for watching television and listening to the radio after the broadcast

● A digital program guide

● A digital video recorder for recording and playing back broadcasts

● A teletext decoder (only for television)

● A snapshot function (only for television)

5.1.1   The main screen

After you start CyberLink TV Enhance, the main screen is displayed with the current TV picture or a default picture for the radio.

The **Home** and **Back** buttons are located in the top left corner of the screen. You can use the Home button to return to the main screen from any menu item of CyberLink TV Enhance. The **Back** button calls up the previous menu page on the main screen when possible.

You can use the three buttons in the top right corner of the screen, as usual in Windows, to minimise the program to the taskbar of the operating system, to maximise/restore and to exit CyberLink TV Enhance.

The buttons at the bottom edge of the screen constitute the so-called **quick menu**. More on this in section 5.2. All buttons fade out automatically after awhile, so that they do not cover the picture. As soon as the mouse pointer moves over the picture area of the program, the buttons reappear.

When starting CyberLink TV Enhance or switching channels, an information field is briefly displayed in the bottom half of the screen containing various details about the current channel. The name of the station is displayed with the current number in the current channel list, along with the time, title and description of the broadcast. The right side shows the current time and a symbol for the current operating mode (e.g. a green triangle for playback).

A progress bar appears at the top of the information field and always shows the current hour. It serves as an overview of the timeshift playback (when the function is enabled). More on this later in this chapter.

5.1.2 The menu screen

Clicking the **Menu** button and selecting the **Menu** entry from the context menu with the mouse or activating the button of the same name on devolo remote control calls up the menu screen. Using buttons on the left side of the screen you can reach the other functions of CyberLink TV Enhance, such as the digital video recorder or the program guide.

Alongside of this to the right there is a miniature display of the current program. Above this appear the name of the program, the current signal strength with the date and time as well as a note about the current audio playback (e.g. the language). If the time and title of the current and the following broadcast can be called up, they appear under the image.

You can click in the playback image or press the **Escape** key to return to the main screen.

5.1.3 The settings screen

The "Settings" button in the menu screen brings you to the various configuration options of CyberLink TV Enhance. For more information about the various configuration options, refer to Chapter 4.
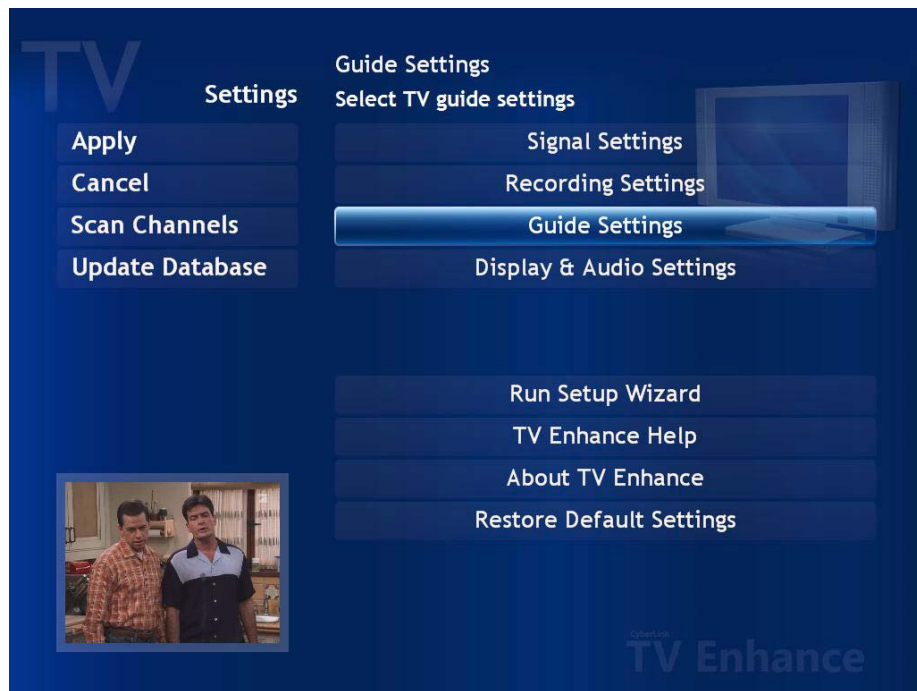
5.2 Watching television, listening to the radio

5.2.1 TV or radio mode

In contrast to terrestrial reception, where different devices are needed to receive TV or radio programs, TV and radio programs broadcast digitally via satellite hardly differ. A DVB-S radio broadcast is like a DVB-S TV program without a picture. Accordingly, functions like subtitle, snapshot or teletext are also not available for satellite radio broadcasts. All other functions, like time-shifted listening,

recording and playback of broadcasts and even the digital program guide can be used as with TV.

During the channel search, TV and radio stations are automatically distinguished. CyberLink TV Enhance offers its own list of channels for both operating modes, which is used when automatically switching to the respective mode.

In the quick menu of CyberLink TV Enhance, you can use the button on the right edge to switch between the TV and radio program at any time. It always shows the symbol of the inactive operating mode (a satellite antenna for radio in TV mode and a TV for the corresponding mode in radio mode). Alternatively, you can also click the Menu button or use the devolo remote control.

5.2.2 Adjusting the window display

In playback mode, four different display options are possible for the main window of CyberLink TV Enhance:

● **Full- screen** (**Maximise** button, top right): The entire area of the screen currently being used to display is used.

● **Window** (**Restore** button, top right): CyberLink TV Enhance runs in a movable window. If the window size allows it, all buttons are displayed.

● **Overlapping window** (**Always on top** button in the quick menu): The current program is displayed in a scalable window without buttons; this window is always on top of the windows of the other, currently running Windows applications.

● **Taskbar** (**Minimise** button, top right): The CyberLink TV Enhance picture has been minimised to the Windows taskbar using the minimise button in the top right corner. By clicking the corresponding program entry in the taskbar, it is enlarged again to the form it had before being minimised.

If offered in the current television program, you can also have subtitles displayed. Click the **Subtitle** button and then select one of the available languages.

Alternatively, you can also click the **Menu** button in the quick menu or press the button of the same name on the devolo remote control and select the **Subtitles** item from the context menu displayed.

In part, subtitles of some stations are offered only via teletext. Call up the table of contents for teletext (e.g. starting with page 101 in teletext) to learn the number of the corresponding table.

5.2.3   Adjusting the audio output

You can use the three buttons in the quick menu at the bottom edge of the screen to increase (**+**) or decrease (**-**) the volume of the audio playback as well as to mute it (**speakers**).

If the current station offers different audio channels (e.g. a digital audio track as well as various language channels), the **Audio** button is available in the quick menu. Clicking the button displays a selection menu in which you can select the desired audio channel.

Alternatively, you can also click the **Menu** button in the quick menu or press the button of the same name on the devolo remote control and select the **Subtitle** item from the context menu displayed.

5.2.4   Time-shifted reception

When starting CyberLink TV Enhance or switching to another channel, the program automatically begins buffering the received video and audio data. As described above, the information field progress bar indicates which part of the

current broadcast CyberLink TV Enhance has already buffered and what point of the broadcast you are currently watching or listening to.

You can use the **Pause** button of CyberLink TV Enhance or on the remote control to pause the playback at any time, while the broadcast continues to be buffered in the background ("Timeshift"). Where you are within the time-shifted playback is indicated both by the light blue bar and by the timestamp under the bar.

Radio broadcasts can also be buffered, paused, fast-forwarded or rewound using Timeshift.

You can use the four navigation buttons in the quick menu, which are also found on the devolo remote control, to fast-forward and rewind within the portion of the current broadcast that CyberLink TV Enhance has buffered, but also to jump to the beginning or the end (=to the real-time playback). Clicking the fast-forward and rewind buttons multiple times varies their speed as follows:

● 1x
● 1.2x

- 1.4x
- 2x
- 4x
- 8x
- 16x
- 32x

An additional click on the corresponding button or on the Play button brings the speed back to the normal playback speed.

*Time-shifted playback enables you to skip over commercials in broadcasts with ease. For example, you can switch to the desired channel at the beginning of the broadcast, but not start watching the program until 15 or 20 minutes later. Skip right to the beginning of the buffered broadcast using the **Beginning button**. Now you can simply skip over the commercials by fast-forwarding and thus approach the point of the real-time playback.*

5.2.5   Selecting programs

During normal playback, you can switch between the available channels in various ways:

- The **Channel down** and **Channel up** buttons in the quick menu or on the devolo remote control always take you to the preceding or following channel.

Switching between channels can take a moment, since data from the new station first needs to be buffered in order to render the picture.

- You can use the **Menu** button in the quick menu or on the devolo remote control to call up a context menu where you can select the **Channel List**. Select the desired station here by navigating with the arrow keys or the mouse (with scroll wheel). The **Channel List** option is also offered on the menu screen.
- If you know the channel number in your channel list, you can also enter it directly via the number keys on the computer keyboard or devolo remote control. The channel number appears in the top right corner of the image in green while CyberLink TV Enhance switches to the desired program.

You can also type the first letter of a station into the computer keyboard. Then CyberLink TV Enhance jumps forward in the channel list to the next entry beginning with this letter.

If you want to find a particular broadcast in your channel list, you can use the search function integrated into CyberLink TV Enhance via **Menu ▶ Menu ▶ Find Program**. To do so, first choose whether you want to find a TV or a radio broadcast.

The various programs are listed **List by Channel** by default. Alternatively, however, you can have them sorted **List by Category**. In doing this, CyberLink TV Enhance makes use of the broadcast descriptions that the majority of stations provide. Specify the program you want by clicking the successively refining categories or by selecting them via the remote control. Finally, the application shows you a list with broadcasts that meet your selection criteria. Via buttons on the left edge of the screen, you can switch back and forth between the various genres as well as jump forwards or backwards one day.

You can enter a keyword to search for a program or reuse a keyword from the list of last-used terms. To enter a new keyword, an on-screen keyboard appears, which can also be operated using the devolo remote control. Alternatively, you can of course also use the computer keyboard. After you confirm your entry with **Enter**, CyberLink TV Enhance shows all broadcasts that match your search term.

The dLAN TV Sat PC supports only free-to-air stations.

5.2.6   The Program Guide (EPG)

Using the electronic program guide (EPG), you can quickly and easily gain an overview of the TV or radio program. You can call up the EPG in CyberLink TV Enhance via **Menu ▶ Menu ▶ Program Guide**. Then select first whether you want to receive the overview for TV or radio stations.

In the program guide, CyberLink TV Enhance displays the various stations in a column and the programs for each in rows. The width of the respective shows indicates their length. You can use the mouse, computer keyboard or devolo remote control to navigate vertically (between the stations) and horizontally (between the shows). While doing this, further details concerning the program selected at present are shown below the table.

By clicking the mouse or pressing the **OK** button on the remote control, you can select from a submenu whether you want to **Set Schedule**, need **More info** or

want to **View Channel**. If this program was already set to be recorded, you can cancel it in the same way via the submenu.

5.2.7   Calling up teletext

As an extra service, the larger TV stations offer teletext with their programs. This provides further information not only about the shows, but also about general topics. The relatively old teletext format consists of three-digit numbered pages with 80 x 25 characters. You can navigate either by directly entering the index number of a page or by the four coloured buttons (red, green, blue, yellow) that are given dynamic functions by the teletext service (e.g. forwards, backwards).

To call up the teletext of a station, click the corresponding button in the quick menu or on the remote control. In the quick menu, all buttons to the right of the **Teletext** button are now replaced by the four coloured buttons just mentioned. The first time a teletext is called up for a channel after starting CyberLink TV Enhance, the overview page with the number 100 is called up. This generally provides brief information about the current TV program, along with other headlines.

At the bottom edge of the screen, the current functions of the four coloured buttons are displayed, for example

● Red: previous page
● Green: next page
● Yellow: overview page
● Blue: sport page

You can carry out the assigned functions by pressing the respective coloured button in the quick menu or on the remote control.

Entering a three-digit number on the computer keyboard or on the devolo remote control calls up the corresponding page, if it exists. The number being entered appears in the top right corner of the screen for verification purposes.

You can use the left and right arrow keys to navigate through subpages of a teletext page, if these are offered. You can use the up and down arrow keys to jump to the next or previous three-digit number on the current page. OK or Enter calls up the page with this number.

Another click or activation of the teletext button places the text on top of the running TV picture, so that you can watch TV and browse through teletext simultaneously. Pressing the button once more switches off the teletext again.

5.2.8   Taking a snapshot

In TV mode, you can use the snapshot button at any time to excerpt part of the current TV or teletext image and save it to your hard drive. To do so, use the corresponding button in the quick menu or on the devolo remote control. The snapshots are saved in the Documents and Settings ▶ <User Name> ▶ My Documents ▶ My Pictures ▶ TV Snapshot directory of your hard drive.

Teletext pages can also be photographed and saved. They can even be saved in text formats, such as .txt, .rtf and even in .html. For more information, refer to Chapter 4.

5.3   Recording and playing back programs

The built-in digital video recorder from CyberLink TV Enhance enables you to record both TV and radio programs, even scheduled, if desired. Then you can watch them later at leisure, whenever you want. All recorded programs are saved in MPEG2 format. Normally you will find the programs in the Documents and Settings ▶ <User Name> ▶ My Documents ▶ My Videos ▶

Recorded TV folder. You can change the destination, however, as desired. For more information, refer to Chapter 4 above.

5.3.1   Spontaneous recording

To record a program that is in progress, use the Record button in the quick menu or on your devolo remote control. The status indicator in the information field for the current program changes to a red dot.

If you want to change channels during a recording, you will be notified that the current recording will stop. Then it is possible to change channels. With a second dLAN TV Sat you have the possibility of watching one program and recording another program simultaneously.

The Stop button ends the recording in progress.

5.3.2   Scheduled recording

There are two ways to program timer recordings.

Since satellites do not transmit any special auxiliary information for recording programs (such as VPS or Showview) as is the case with terrestrial transmission methods, the recording of DVB-S(2) programs can be controlled exclusively by the time of day.

Recording via the program guide

You can search for the desired program in the program guide (EPG) manually by navigating with the arrow keys, clicking (or pressing the OK button on the remote control) and selecting the Set Schedule menu item. The corresponding program is marked by a blue dot and recorded at the desired time.

Setting a schedule for recordings

Alternatively, you can specifically pre-program recordings via Menu ▶ Menu ▶ Schedule. To do so, first use the quick menu or the devolo remote control to switch to the desired mode (TV or radio). Then call up the schedule overview. If any recordings have been scheduled already, they are displayed to the right. You can use the corresponding button at the left edge of the screen to sort this list either by channel or by date.

To set a new recording, select the New Schedule button. Define the various settings for the recording here:

● TV/AV source: Leave this value at Digital TV (DVB-S) 1

● **Channel**: Select the station here
● **Scheduling interval**: Here you can define whether the recording should take place once or regularly (e.g. every day or on a particular day of the week).
● **Start date**: Select the date of the program here.
● **Starting Time/Ending Time**: Here you can use drop-down menus to set when the recording is to begin and end.

Confirm your entries with the **Apply** button. Now the recording appears in the schedule overview and is carried out automatically at the set time.

5.3.3   Playing back recordings

You can watch existing recordings via **Menu** ▶ **Menu** ▶ **Recorded TV**. The existing recordings are displayed on the right side. You can use the two buttons on the left side to look at the list view by files, channels or categories and sort them by name or recording date.

By clicking or selecting a recording with the devolo remote control, you can select whether you want to watch it from the beginning (**Play Video**), continue viewing from the last point of time (**Resume**) or delete the recording (**Delete**).

When watching a recording, you can use the Stop, Play and Pause buttons to control playback. You can use the navigation buttons to jump to the beginning or end of the recording as well as to fast-forward and rewind quickly. Of course, the buttons for controlling speaker volume and for taking snapshots are also available.

6   Appendix

6.1   Important safety instructions

All safety and operating instructions should be read and understood before using the device, and should be kept for future reference.

● Never open the device. There are no user-serviceable parts inside the device.

Do not try to service this product yourself! Contact qualified technicians each and every time your device needs maintenance. There is a risk of electric shock!

● Use the device in a dry location only.
● Always use the included network cable to connect the device.
● Do not insert any objects into the openings of the device.
● To disconnect the device from the power supply grid, pull the power plug.
● Do not keep the device in direct sunlight.
● Slots and openings on the case serve as ventilation. Never block or cover them.
● Never set up the device near a heater or radiator.
● The device should be located only where sufficient ventilation can be ensured.
● Disconnect the device from the power supply grid before cleaning. Use a moist towel to clean the device. Never use water, paint thinner, benzene, alcohol or other strong cleaning agents when cleaning the device, as these could damage the case.
● Never use the device with a power supply that does not meet the specifications provided on the rating plate. If you do not know what type of power supply you have at home, contact your dealer or energy supplier.
● In the event of damage, disconnect the device from the power supply grid and contact customer service. This applies, for example, if
  ○ the power cable or plug is damaged.
  ○ liquid has been spilled on the device or objects have fallen into the device.
  ○ the device has been exposed to rain or water.
  ○ the device does not work, even though the operating instructions have been followed properly.
  ○ the device's case is damaged.

6.2　　　dLAN bandwidth optimisation

We recommend observing the following connection rules to eliminate possible sources of interference in the dLAN: Avoid extension strips. This may impair the transmission of the dLAN TV Sat PC signal. Free wall outlets are preferable.

Also position the adapter away from your computer, as it may interfere with the adapter's operation. Plug the devices into different outlets and avoid using the same extension strip.

6.3 The devolo remote control

The following is a brief explanation of the buttons on the devolo remote control (always moving from left to right):

Transmit LED (red), Start/exit CyberLink TV Enhance

TV/radio toggle switch, Start/stop recorded programs, Help for CyberLink TV Enhance, Full-screen

Record TV/radio programs, Stop playback of TV/radio stations and Exit timeshift, Pause during playback and Start timeshift

Rewind, Play and play back the recorded data during timeshifting, Fast forward

Skip to beginning/end

Back, Information about the current program

Navigation button, OK

Volume, Call up program guide (EPG), Channel selection up/down

Mute on/off

Menu, Audio, Snapshot, Call up the last viewed channel

Number/letter keys

Clear entry, Enter

Teletext navigation buttons

Teletext on/transparent/off

The devolo remote control is Windows compatible. For operation in Mac OS X, you can use the Apple Remote control.

When inserting the batteries, ensure that the polarity is correct. Using the batteries incorrectly can damage the remote control.

6.4   Technical specifications

	dLAN TV Sat Tuner
Device port	F-jack (coax) Ethernet RJ45 DC connector (OD: 5.5 mm/0.217"; ID: 2.1 mm/0.083")
Standards	Ethernet specifications IEEE 802.3, IEEE 802.3x, IEEE 802.3u, Auto MDI/X HomePlug AV DVB-S2
Range	200m over the power grid
Security	128-bit AES encryption over the power grid (enabled at the touch of a button)
Transmission speed	200 Mbps
Transmission method	asynchronous
Modulation	OFDM - 1155 carriers, 1024/256/64-QAM, QPSK, BPSK

LEDs	● Power / Power save
	● Ethernet Link/Act
	● dLAN (Link/Act/quality)
	● Power supply
	  ○ Power / Power save
	  ○ Ethernet (Link/Act)
	  ○ dLAN (Link/Act/quality)

Power consumption	max. 30 W
Voltage supply	200 - 240 V
Power supply	12 V; 1.5 A
Temperature	Storage: -25°C to 70°C Operation: 0°C to 40°C
Weight	762 g/1.68 lbs (incl. power supply)
Dimensions	30 x 117 x 191 mm (height x width x depth)
Ambient conditions	10–90% humidity (non-condensing)

	dLAN TV Sat Tuner
System requirements	Ethernet interface Coax cable with F-connector with satellite access USB port for infrared receiver (remote control)
Operating systems	Windows XP (32bit), Windows Vista (32 and 64 bit), Mac OS X (10.4.11 and higher), Ubuntu 8.04 and 8.10
Certifications	CE-compliant in accordance with the technical requirements of all EU countries and Switzerland: EN 60950-1:2001 + A11:2004, EN 55024:1998 + A1:2001 + A2:2003, EN 55020:2007, EN 55022:2006 (Class B), EN 55013:2001 + A1:2003 + A2:2006, EN 50412-2-1:2005

	dLAN 200 AVeasy
Standards	Ethernet specifications IEEE 802.3, IEEE 802.3x, IEEE 802.3u, Auto MDI/X HomePlug AV
Protocols	CSMA/CA
Transmission speed	200 Mbps
Transmission method	asynchronous
Modulation	OFDM - 1155 carriers, 1024/256/64-QAM, QPSK, BPSK
Data path	Ethernet <-> power grid
Range	200m over the power grid
Security	128-bit AES encryption over the power grid (enabled at the touch of a button)
LEDs	● Power / Power save ● Ethernet (Link/Act) ● dLAN (Link/Act/quality)
dLAN port	EURO mains plug
Device port	Ethernet RJ45
Power consumption	5 W (max.); 3.3 W in standby
Voltage supply	AC 100 to 240 V; 50 to 60 Hz
Temperature	Storage: -25°C to 70°C Operation: 0°C to 40°C
Weight	148 g
Dimensions	80 x 65 x 75 mm (height x width x depth)

	dLAN 200 AVeasy
Ambient conditions	10—90% humidity (non-condensing)
System requirements	Ethernet interface
Operating systems	Windows® XP 32bit, Windows® Vista 32 / 64 bit, Linux®, Mac OS® X and all operating systems with TCP/IP support
Certifications	CE-compliant in accordance with the technical requirements of all EU countries and Switzerland: EN 55022, EN 50412, EN 60950

6.5   Disposal of

6.5.1   Old devices

The icon with crossed-out wastebasket on the device means that this adapter is an electrical or electronic device that falls within the scope of application of the German Electrical and Electronic Equipment Act. Since 24 March 2006, these types of devices may no longer be disposed of with household waste. Rather, in Germany, they can be given to a municipal collection point free of charge. Contact your municipal government to find out the address and hours of the nearest collection point.

6.5.2   Batteries

In Germany, the German Battery Ordinance prohibits batteries and rechargeable batteries from being disposed of with household waste. Instead, you can return these at no charge at your municipal collection point or at the retailer (e. g. supermarket, specialist shop).

6.6 CE conformity

6.6.1 dLAN TV Sat Tuner

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KONFORMITÄTSERKLÄRUNG

DECLARATION OF CONFORMITY

Hersteller: Manufacturer:	**devolo AG** **Charlottenburger Allee 60** **52068 Aachen**
Produkt: Product:	**devolo dLAN®TV Sat Tuner**
Typnummer: Type number:	**MT 2127**
Verwendungszweck: Intended purpose:	**TV Tuner zu Ethernet** TV tuner to Ethernet
Richtlinie: Directive:	**1999/5/EG (R&TTE)** 1999/5/EC (R&TTE)

Das Produkt entspricht den grundlegenden Anforderungen und Bestimmungen der folgenden Normen und Methoden:
The product complies with the essential requirements and provisions of following standards and methods:

Sicherheitsanforderungen: Safety requirements:	**EN 60950-1:2001 + A11:2004**
Immunitätsanforderungen: Immunity requirements:	**EN 55024:1998+A1:2001+A2:2003** **EN 55020:2007**
Emissionsanforderungen: Emission requirements:	**EN 55022:2006 (Class B)** **EN 55013:2001+A1:2003+A2:2006**

Diese Erklärung wird verantwortlich abgegeben durch:
This declaration is submitted by:

Aachen, 29. Juli 2009
Aachen, 29th July 2009

Heiko Harbers
Vorstandsvorsitzender
CEO

6.6.2   dLAN TV Sat PC Remote control

$$C\,E$$

KONFORMITÄTSERKLÄRUNG

DECLARATION OF CONFORMITY

Hersteller: Manufacturer:	**devolo AG** **Sonnenweg 11** **52070 Aachen**
Produkt: Product:	**devolo Remote Control**
Typnummer: Type number:	**MT 2181**
Richtlinie: Directive:	**EMV 2004/108/EG** EMC 2004/108/EC

Das Produkt entspricht den grundlegenden Anforderungen und Bestimmungen der folgenden Normen und Methoden:
The product complies with the essential requirements and provisions of following standards and methods:

Immunitätsanforderungen: Immunity requirements:	**EN 55024:1998+A1:2001+A2:2003**
Emissionsanforderungen: Emission requirements:	**EN 55022:1998+A1:2000+A2:2003**

Diese Erklärung wird verantwortlich abgegeben durch:
This declaration is submitted by:

Aachen, 31. Juli 2008
Aachen, 31th Jule 2008

Heiko Harbers
Vorstandsvorsitzender
CEO

6.6.3 dLAN TV Sat PC Infrared receiver

C E

KONFORMITÄTSERKLÄRUNG

DECLARATION OF CONFORMITY

Hersteller: **devolo AG**
Manufacturer: **Sonnenweg 11**
52070 Aachen

Produkt: **devolo Infrared receiver**
Product:

Typnummer: **MT 69727**
Type number:

Richtlinie: **EMV 2004/108/EG**
Directive: EMC 2004/108/EC

Das Produkt entspricht den grundlegenden Anforderungen und Bestimmungen der
folgenden Normen und Methoden:
The product complies with the essential requirements and provisions of following standards and methods:

Immunitätsanforderungen: **EN 55024:1998+A1:2001+A2:2003**
Immunity requirements:

Emissionsanforderungen: **EN 55022:1998+A1:2000+A2:2003**
Emission requirements:

Diese Erklärung wird verantwortlich abgegeben durch:
This declaration is submitted by:

Aachen, 31. Juli 2008
Aachen, 31th Jule 2008

Heiko Harbers
Vorstandsvorsitzender
CEO

6.6.4 dLAN TV Sat PC Power supply

$$C\,E$$

KONFORMITÄTSERKLÄRUNG

DECLARATION OF CONFORMITY

Hersteller: **devolo AG**
Manufacturer: **Sonnenweg 11**
                                          52070 Aachen

Produkt: **devolo dLAN®Power supply 200-18**
Product:

Typnummer: **MT 2117**
Type number:

Verwendungszweck: **PLC zu Ethernet Adapter und Netzteil**
Intended purpose: PLC to Ethernet Adapter and Power supply

Richtlinie: **EMV 2004/108/EG**
Directive: EMC 2004/108/EC

Das Produkt entspricht den grundlegenden Anforderungen und Bestimmungen der
folgenden Normen und Methoden:
The product complies with the essential requirements and provisions of following standards and methods:

Sicherheitsanforderungen: **EN 60950-1:2006**
Safety requirements:

Immunitätsanforderungen: **EN 50412-2-1:2005**
Immunity requirements: **EN 61204-3:2000**

Emissionsanforderungen gestrahlt: **EN 55022:2006**
Emission requirements radiated:

Emissionsanforderungen leitungsgebunden: **TCF vom Notified Body**
Emission requirements conducted: **EMV Bericht Nr. TCF-LDN 08.08.001-PLC**
                                                         TCF from Notified Body
                                                         EMC report No. TCF-LDN 08.08.001-PLC

Diese Erklärung wird verantwortlich abgegeben durch:
This declaration is submitted by:

Aachen, 26. August 2008
Aachen, 26th August 2008

Heiko Harbers
Vorstandsvorsitzender
CEO

6.6.5   dLAN 200 AVeasy

C E

KONFORMITÄTSERKLÄRUNG

DECLARATION OF CONFORMITY

Hersteller: **devolo AG**
Manufacturer: **Sonnenweg 11**
                              52070 Aachen

Produkt: **devolo dLAN®200 AVeasy**
Product:

Typnummer: **MT 2109, 2110, 2111**
Type number:

Verwendungszweck: **PLC zu Ethernet**
Intended purpose: PLC to Ethernet

Richtlinie: **EMV 89/336/EWG**
Directive: EMC 89/336/EEC

Das Produkt entspricht den grundlegenden Anforderungen und Bestimmungen der
folgenden Normen und Methoden:
The product complies with the essential requirements and provisions of following standards and methods:

Sicherheitsanforderungen: **EN 60950-1:2001+A11:2004**
Safety requirements:

Immunitätsanforderungen: **EN 50412-2-1:2006**
Immunity requirements:

Emissionsanforderungen: **EN 55022:2006 (Class B)**
Emission requirements: **und Expert Opinion vom Competent Body EMV**
                              and Expert Opinion by Competent Body EMC

Diese Erklärung wird verantwortlich abgegeben durch:
This declaration is submitted by:

Aachen, 10. Mai 2007
Aachen, 10th May 2007

Heiko Harbers
Vorstandsvorsitzender
CEO

6.7   Warranty conditions

The devolo AG warranty is given to purchasers of devolo products in addition to the warranty conditions provided by law and in accordance with the following conditions:

1   Warranty coverage

a)   The warranty covers the equipment delivered and all its parts. Parts will, at devolo's sole discretion, be replaced or repaired free of charge if, despite proven proper handling and adherence to the operating instructions, these parts became defective due to fabrication and/or material defects. Alternatively, devolo reserves the right to replace the defective product with a comparable product with the same specifications and features. Operating manuals and possibly supplied software are excluded from the warranty.

b)   Material and service charges shall be covered by devolo, but not shipping and handling costs involved in transport from the buyer to the service station and/or to devolo.

c)   Replaced parts become property of devolo.

d)   devolo is authorized to carry out technical changes (e.g. firmware updates) beyond repair and replacement of defective parts in order to bring the equipment up to the current technical state. This does not result in any additional charge for the customer. A legal claim to this service does not exist.

2   Warranty period
The warranty period for this devolo product is three years. This period begins at the day of delivery from the devolo dealer. Warranty services carried out by devolo do not result in an extension of the warranty period nor do they initiate a new warranty period. The warranty period for installed replacement parts ends with the warranty period of the device as a whole.

3   Warranty procedure

a)   If defects appear during the warranty period, the warranty claims must be made immediately, at the latest within a period of 7 days.

b)   In the case of any externally visible damage arising from transport (e.g. damage to the housing), the person carrying out the transportation and the sender should be informed immediately. On discovery of damage which is not externally visible, the transport company and the sender are to be immediately informed in writing, at the latest within 3 days of delivery.

c)   Transport to and from the location where the warranty claim is accepted and/or the repaired device is exchanged, is at the purchaser's own risk and cost.

d)   Warranty claims are only valid if a copy of the original purchase receipt is returned with the device. devolo reserves the right to require the submission of the original purchase receipt.

4   Suspension of the warranty
All warranty claims will be deemed invalid

a)   if the label with the serial number has been removed from the device,

b)   if the device is damaged or destroyed as a result of acts of nature or by environmental influences (moisture, electric shock, dust, etc.),

c)   if the device was stored or operated under conditions not in compliance with the technical specifications,

d)   if the damage occurred due to incorrect handling, especially to non-observance of the system description and the operating instructions,

e)   if the device was opened, repaired or modified by persons not contracted by devolo,

f)   if the device shows any kind of mechanical damage, or

g)   if the warranty claim has not been reported in accordance with 3a) or 3b).

5   Operating mistakes

If it becomes apparent that the reported malfunction of the device has been caused by unsuitable hardware, software, installation or operation, devolo reserves the right to charge the purchaser for the resulting testing costs.

6   Additional regulations

a)   The above conditions define the complete scope of devolo's legal liability.

b)   The warranty gives no entitlement to additional claims, such as any refund in full or in part. Compensation claims, regardless of the legal basis, are excluded. This does not apply if e.g. injury to persons or damage to private property are specifically covered by the product liability law, or in cases of intentional act or culpable negligence.

c)   Claims for compensation of lost profits, indirect or consequential detriments, are excluded.

d)   devolo is not liable for lost data or retrieval of lost data in cases of slight and ordinary negligence.

e)   In the case that the intentional or culpable negligence of devolo employees has caused a loss of data, devolo will be liable for those costs typical to the recovery of data where periodic security data back-ups have been made.

f)   The warranty is valid only for the first purchaser and is not transferable.

g)   The court of jurisdiction is located in Aachen, Germany in the case that the purchaser is a merchant. If the purchaser does not have a court of jurisdiction in the Federal Republic of Germany or if he moves his domicile out of Germany after conclusion of the contract, devolo's court of jurisdiction applies. This is also applicable if the purchaser's domicile is not known at the time of institution of proceedings.

h)   The law of the Federal Republic of Germany is applicable. The UN commercial law does not apply to dealings between devolo and the purchaser.

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